UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2001/01008

February 20, 2003

Mr. Lawrence Evans
U.S. Army Corps of Engineers, Portland District
ATTN: Teena Monical
P.O. Box 2946
Portland, OR 97208-2946

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation on the Effects of the Frank Parrish Bridge Replacement Project, Coast Fork Willamette River, Lane County, Oregon (Corps No. 2001-00799)

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) pursuant to section 7 of the Endangered Species Act (ESA) prepared by the National Marine Fisheries Service (NOAA Fisheries), on the effects of the proposed Frank Parrish Bridge Project, Lane County, Oregon. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of ESA-listed Upper Willamette River chinook salmon (*Oncorhynchus tshawytscha*). As required by section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the impact of incidental take associated with this action.

This document also serves as consultation on essential fish habitat pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and its implementing regulations at 50 CFR Part 600.

If you have any questions regarding this consultation, please contact Christy Fellas of my staff in the Oregon Habitat Branch at 503.231.2307.

Sincerely,

for Michael R Course

D. Robert Lohn
Regional Administrator

cc: Bob Wilson, Lane County

Endangered Species Act - Section 7 Consultation
Biological Opinion

&

Magnuson-Stevens Fishery Conservation and Management Act
Essential Fish Habitat Consultation

Frank Parrish Bridge Replacement Project,
Coast Fork Willamette River,
Lane County, Oregon
(Corps No. 2001-00799)

Agency:	U.S. Army Corps of Engineers
Consultation Conducted By:	National Marine Fisheries Service, Northwest Region
Date Issued:	February 20, 2003
Issued by:	for Michael R Course D. Robert Lohn Regional Administrator
Refer to:	**2001/01008**

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1. INTRODUCTION

1.1 Consultation History

On October 16, 2001, the National Marine Fisheries Service (NOAA Fisheries) received a request from the Corps of Engineers (COE) for Endangered Species Act (ESA) section 7 informal consultation for the Frank Parrish Bridge Project, Lane County, Oregon. Staff discussions led to the determination that the proposed project would be likely to adversely affect listed species. The applicant decided to redesign the project to minimize these effects. On December 2, 2002, NOAA Fisheries received a letter and a biological assessment (BA) from the COE and initiated formal consultation under the ESA and the Magnuson-Stevens Fishery Management and Conservation Act (MSA) on the proposed project. The COE determined that Upper Willamette River (UWR) chinook (*Oncorhynchus tshawytscha*) are likely to be adversely affected (LAA) by the proposed project.

This biological opinion (Opinion) is based on the information presented in the BA, site visits, and discussions with Lane County, COE, and project consulting firm Mason, Bruce and Girard.

This Opinion considers the potential effects of the proposed action on UWR chinook. UWR chinook were listed as threatened on March 24, 1999 (64 FR 14308) and protective regulations issued on July 10, 2000 (65 FR 42422). Additional references and biological information is available in Myers *et al.*1998 and Healey 1991. This consultation is conducted pursuant to section 7(a)(2) of the ESA and its implementing regulations, 50 CFR 402.

1.2 Proposed Action

The project area is beside the Coast Fork of the Willamette River, south of the city of Springfield, in Lane County, Oregon. The project area centers on the bridge crossing just west of the junction of Frank Parish Road and Seavey Way. The Frank Parrish Bridge provides vehicle, pedestrian, and bicycle access to the Howard Buford Recreation Area.

The 30-year-old, single-lane timber bridge crossing the Coast Fork of the Willamette River is in a deteriorated structural condition. Additionally, the bridge width is inadequate to accommodate the traffic to the Howard Buford Park and Recreational Area, which includes the Mt. Pisgah Arboretum. The Park has over 50,000 annual visits that occur primarily during the summer, and often has thousands of visits during single day events. The purpose of this project is to improve safety and flow of traffic.

Lane County proposes to replace the existing 4.9 meter (m) wide, one-lane three-span bridge with a 10.8 m wide, two-lane two-span bridge. The existing bridge has two steel-pile bents within the wetted channel, one of which is within the thalweg. The new bridge length will be 78 m overall, divided into two 39 m spans. The replacement structure will have only one in-channel 1 m by 5 m concrete pier shaft supported by a 6 m by 11 m footing. The footing foundation will consist of steel H-piles with reinforced tips.

1.2.1 Temporary Work Bridge

A temporary bridge will function as both a work platform to facilitate construction of the new bridge and as a detour for vehicular and pedestrian traffic across the river. The temporary bridge will be a 10.8 m wide, two-lane bridge. The north lane will be serve as the traffic detour and the south lane will provide construction access for the new bridge. The temporary bridge will be a 4- to 7-span structure consisting of approximately eight runs of steel I-beam girders supported on up to eight bents. Each bent will consist of approximately seven 0.3 m diameter steel piles. Up to six bents will be located below ordinary high water (OHW). Up to 100 steel piles will be located below the OHW to provide adequate support for the temporary bridge. Construction of the temporary bridge will require that steel piles be driven directly into the streambed. Piles will be driven to a depth of approximately 3 to 7 m below the surface of the streambed. The decking will be lined with plastic sheathing to prevent fluids or debris from entering flowing water through the bridge deck. Curbs will also be constructed to contain fluids, stormwater, and debris. Following completion of the span, the crane will be moved out onto the newly constructed span. The vehicle travel lane will be paved with a 50 millimeter (mm) thick layer of asphalt concrete. The construction platform portion of the temporary bridge will not be paved. Removal of the temporary bridge will occur in opposite sequencing as construction. Temporary piles will be removed with vibratory extraction methods from the new structure. The temporary bridge will be constructed entirely from above the water or from each end with no equipment operating in the water.

No in-water work area isolation will be implemented for driving and removal of temporary bridge piles. Construction equipment and vehicles will not enter the stream below the OHW. It is expected that a one month extension of the preferred in-water work period of June 1 to October 31 will be granted in order complete all in-water work activities within a single construction season. Pile driving would need to begin approximately on May 1 to avoid having the temporary structure remain in the river through the winter and following spring. Three existing roadway approaches will be reconstructed and paved: one approach on Seavey Way from the west, and two approaches from Buford Park Road and Frank Parrish Road to the east. A little-used gated park maintenance access will also be reconstructed on the east approach. The project will also include construction of stormwater control and treatment measures.

1.2.2 Removal of Existing Bridge

Demolition of the existing bridge will be carried out following construction of the temporary bridge. Prior to demolition of the bridge, debris containment measures will be installed under the bridge to contain any bridge materials that may fall off or be dropped during the removal process. The asphalt portion of the deck will be removed first. The existing asphalt will be removed with an excavator or similar equipment. Bridge rails will be removed concurrently with the asphalt. Following complete removal of asphalt and rails, the wood portion of the bridge deck will be removed in such a manner as to prevent large pieces of debris from falling into the containment system. Methods for deck removal may include saw-cutting of the deck into manageable pieces. Following removal of the deck, the wooden diaphragms (cross bracing) will

be removed from between the beams. The glulam beams will be lifted off intact using one or two cranes operating from the temporary bridge. The treated timber fender boards protecting the steel pilings from drift will be removed in such a manner as to prevent dropping any treated wood into the river. Following removal of the fender boards, the steel H-pilings will be removed using vibratory extraction methods. It is expected that all of the pilings will be removed from the streambed in this manner. Finally, the abutments will be removed using an excavator or similar equipment operating from the adjacent roadway.

1.2.3 Construction of New Bridge

The proposed new bridge will be a two-span, pre-cast concrete deck with deck bulb-T girders supported by a total of three bents, concrete caps and driven piling. The overall bridge length will be 78 m divided equally into two 39 m spans. There will be one pier (Bent 2) located in the wetted channel about halfway between the thalweg and the edge of the high-flow channel to the east. Two abutments (Bents 1 and 3) will be located on each bank as in the case of the existing bridge. The bridge will have an out-out (overall) width of 11.5 m and a 10.8 m roadway width. The roadway will consist of two 3.3 m travel lanes and two 1.5 m shoulders. A 50 mm thick pavement layer will cover the bulb-T girders, the tops of which form the bridge deck. The bridge will be curbed to direct stormwater runoff to the ends of the guardrail for delivery to a vegetated ditch which will be constructed at the west end of the bridge and to a large existing swale located northeast of the bridge. Concrete bridge rails will be installed on both sides of the bridge. For compete details of the new structure please refer to the BA and design drawings.

1.2.4 Stormwater Treatment

The existing Frank Parrish Bridge is not curbed. Currently, stormwater runs off the bridge directly to the river below. The new bridge will be curbed to direct stormwater to the bridge ends into a newly-constructed vegetated ditch at the west end of the bridge and to a large existing swale located northeast of the bridge. On the east side of the river, Frank Parrish Road and Buford Park Road are both unpaved gravel roads. Both roads are oiled for dust abatement. However, runoff from these roads is very muddy in wet weather. Because the roads have been oiled for years and receive regular vehicular traffic, their surfaces are essentially impervious.

Stormwater from the project area will be routed to newly constructed and existing ditches and swales. A vegetated ditch is proposed for the southwest corner of the bridge to accept runoff from the western half of the bridge. The vegetated ditch will be approximately 12 m long, will cover an area of 21 square meters (m^2), and will accept runoff from an area of approximately 692 m^2, encompassing the west end of the bridge and the bridge approach. The roadway slopes away from the bridge at the west end, thus little or no runoff from the bridge approach or roadway would enter the vegetated ditch. Runoff from Seavey Way will sheet flow into adjacent roadside ditches. Stormwater runoff from the northwest corner of the bridge will be piped under the roadway and into the ditch on the southwest corner.

The swale will be large enough to accept all runoff from the eastern portion of the project without significant concern for exceeding its capacity. Approximately 505 m^2 of impervious surface area encompassing the eastern portion of the bridge and portions of Buford Park Road and Frank Parrish Road will contribute runoff directly to the swale. A combination of pipe and vegetated ditches will be constructed to convey runoff to the existing swale. This will require trenching and ditch excavation between the northeast corner of the proposed bridge and the swale. Vegetation cleared for this activity will primarily consist of Himalayan blackberry. Following construction, the area would be re-seeded with a native grass seed mix.

1.2.5 Roadway Construction

The new two-lane bridge structure includes 485 m^2 of new impervious surface directly over the Coast Fork Willamette River, and thus will intercept precipitation bound directly for the river and redirect it to the bridge ends and vegetated ditches. Widening and reconstruction of Seavey Way within the project limits will increase impervious surface area on the west side of the river by 466 m^2. Paving Buford Park Road and Frank Parrish Road within the project limits will convert 1,619 m^2 of existing oiled and compacted gravel roadway to asphalt. This area is not considered new impervious surface because the condition of the existing roadway renders the surface essentially impervious to stormwater infiltration. However, widening of these roadways within this portion of the project area will result in an overall increase in impervious surface areas of 308 m^2. The total increase in impervious surface area due to the project will be 1,259 m^2. Included in this total is the 485 m^2 of additional bridge deck surface. Thus, the net increase in impervious surface area resulting in conversion of pervious ground to an impervious condition is 774 m^2.

Clearing and grubbing for the project will include some tree removal. Approximately 36 Oregon ash trees will be removed from the project area for widening of roadways and construction of the new bridge. Project plans include development of and Erosion and Sediment Control Plan (ESCP) to limit sediment delivery to the Coast Fork Willamette River. All removed trees will be replaced with new plantings at a 4:1 ratio in the project area.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

2.1.1 Biological Information

The action area is defined by NOAA Fisheries regulations (50 CFR 402) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area is the Coast Fork Willamette River adjacent to the work area and downstream to the limit of visible turbidity.

Essential habitat features for salmonids are: Substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions. The proposed action may affect the essential habitat features of water quality, riparian vegetation and substrate. The Coast Fork Willamette River within the action area serves as a migration area for UWR chinook salmon.

2.1.2 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402. NOAA Fisheries must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of: (1) Defining the biological requirements and current status of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

For the proposed action, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NOAA Fisheries' analysis considers the extent to which the proposed action impairs the function of essential elements necessary for migration, spawning, and rearing of UWR chinook salmon under the existing environmental baseline.

2.1.2.1 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmonids is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species, taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list the species for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for the listed species to survive and recover to a naturally-reproducing population level, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance its capacity to adapt to various environmental conditions, and allow it to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful rearing and migration. The current status of the listed species, based upon their risk of extinction, has not significantly improved since the species were listed.

2.1.2.2 Environmental Baseline

The Willamette River watershed covers a vast area (29,785 km^2) bordered on the east and west by the Cascades and the Pacific coast ranges. It drains from as far south as Cottage Grove and flows north to its confluence with the Columbia River. The Willamette River watershed is the largest river basin in Oregon. It is home to most of the state's population, its largest cities, and many major industries. The watershed also contains some of Oregon's most productive agricultural lands and supports important fishery resources (City of Portland 2001).

The uplands (Coast and Cascade Ranges) receive about 80% of the precipitation falling on the Willamette River basin, and store much of this water as snow. Ecosystem productivity in these upland streams is relatively low, with aquatic insects gleaning much of their diet from material that falls into running water. In larger, slower tributaries, more plant material is produced in the stream itself. The mainstem supports a highly productive algal community that blooms as temperatures rise in the summer. Insects and some vertebrates feed on these plants, and many vertebrates, including salmonids, feed on stream-dwelling insects. Much of the habitat for Willamette River salmonids has been degraded by various land use practices or eliminated by dams. Wild salmonid populations have declined precipitously over the last century in the Willamette River (WRI 1999).

Significant changes have occurred in the watershed since the arrival of Europeans in the 1800s. The watershed was mostly forested land prior to the arrival of white settlers. Now, about half the basin is still forested. One-third of the basin is used for agriculture, and about 5% is urbanized or is in residential use. The river receives direct inputs from treated municipal wastes and industrial effluents. Nonpoint source input from agricultural, silvicultural, residential, urban and industrial land uses are also significant, especially during rainfall runoff.

The Coast Fork Willamette River flows from its headwaters in the Calapooya Mountains to its confluence with the Middle Fork of the Willamette River at river kilometer 300 of the mainstem of the Willamette River, southeast of the City of Eugene. The Coast Fork Willamette River drains an area of 1,730 km^2.

Flood control in the Coast Fork Willamette River watershed is maintained by two dams: Cottage Grove Dam, located on the mainstem, and Dorena Dam, located on the Row River. Reservoirs reduce peak flows and augment summer low-flows. The month of typically lowest flows has changed from September to July following construction of the two dams. The soils range from excessively well-drained to well-drained. The average gradient is less than 3%, but this value is much greater in the headwaters. The dominant substrate is cobble mixed with gravel. The estimated active channel width (bankfull width) at the project area is 55 m. The climate of the

Coast Fork Willamette River watershed is characterized by warm summers with cool winters, generally lacking snow and freezing temperatures.

Land use in the Coast Fork Willamette River watershed is primarily agricultural, with mostly rural residences and minor urban concentrations. The riparian habitat along the river is composed of deciduous tree species with an understory of herbaceous vegetation. Upstream and downstream of the project the riparian corridor is largely intact, although periodically interrupted by urban or agricultural developments.

The Coast Fork Willamette River from its confluence to the Cottage Grove Reservoir, inclusive of the project site, is currently listed on the Oregon Department of Environmental Quality (DEQ) 303(d) List of Water Quality Limited Water Bodies (DEQ 1999). DEQ listed water quality problems identified in the project area include summer temperature, fecal coliform, and mercury levels. The preferred in-water work period for the Coast Fork of the Willamette River is June 1 through October 31.

2.1.3 Analysis of Effects

2.1.3.1 Effects of the Proposed Action

Creeks and rivers are dynamic systems that naturally alter their courses in response to many physical processes. Roadways and other structures constructed along waterways are subject to flooding and undercutting as a result of these natural changes in the stream course. Structural hardening of embankments is the traditional means of protecting these structures along waterways. Hardened embankments simplify stream channels, alter hydraulic processes, and prevent natural channel adjustments (Spence *et al.* 1996). Moreover, embankment hardening may shift the erosion point either upstream or downstream of the project and accelerate stream velocity. As amplified erosive forces attack different locations and landowners respond with more bank hardening, the river eventually attains a continuous fixed alignment lacking habitat complexity (USACE 1977).

Fish habitats are enhanced by diversity of habitats at the land-water interface and adjacent bank (USACE 1977). Streamside vegetation provides shade that reduces water temperature and stabilizes stream banks. Overhanging branches provide cover from predators. Insects and other invertebrates that fall from overhanging branches may be preyed upon by fish, or provide food sources for other prey organisms. Immersed vegetation, logs, and root wads provide points of attachment for aquatic prey organisms, shelter from swift currents during high flows, retain bed load sediment, create pools, and reduce flow velocity.

The combination of channel confinement within the existing bridge abutments and the legacy of large woody material removal within the system and specifically at roadway crossings has simplified the habitat within the action area and retarded the formation and maintenance of complex fish habitat within the project reach.

Sediment

The driving of the temporary H-pile bridge piers may temporarily increase releases of sediment. Transportation of sediments into the Coast Fork Willamette River from upland construction activities is also possible. Upland excavation will expose and dislodge soils, increasing erosion and stream turbidity during rainfall. An increase in turbidity from suspension of fine sediments can adversely affect fish and filter-feeding macro-invertebrates downstream of the work site. At moderate levels, turbidity has the potential to reduce primary and secondary productivity; at higher levels, turbidity may interfere with feeding and may injure and even kill both juvenile and adult fish (Spence *et al.* 1996, Berg and Northcote 1985).

To minimize the potential for increased turbidity and disturbance of fish, most in-water work will occur during the preferred in-water work timing guideline. During this window, streamflows are typically low, fish presence is reduced, and rainfall is minimal. Additionally, construction will begin prior to the work window, in May. Few listed chinook salmon are expected to be present in the project area during May. This extension will allow the structure to be completed in one season and avoid the need to leave the temporary bridge in place until the next work window.

Chemical Contamination

As with all construction activities, accidental release of fuel, oil, and other contaminants may occur. Operation of the back-hoes, excavators, and other equipment requires the use of fuel, lubricants, *etc.*, which, if spilled into the channel of a water body or into the adjacent riparian zone, can injure or kill aquatic organisms. Petroleum-based contaminants (such as fuel, oil, and some hydraulic fluids) contain poly-cyclic aromatic hydrocarbons (PAHs), which can be acutely toxic to salmonids at high levels of exposure and can also cause chronic lethal and acute and chronic sublethal effects to aquatic organisms (Neff 1985). Similarly, exposure to herbicides can have lethal and sublethal effects on salmonids, aquatic invertebrates, aquatic vegetation, and target and non target riparian vegetation (Spence *et al.* 1996).

To minimize the potential for chemical contamination and disturbance of fish, most in-water work will occur during the ODFW preferred in-water work timing guideline of June 1 through October 31. During this window, streamflow is typically low, fish presence is reduced, and rainfall is minimal. In-water work area isolation will allow the work to occur in the dry, thereby reducing indirect (chemical contaminants) from entering the actively flowing water and direct impacts to fish. Work will also be done prior to the window, during May, but this extension will allow completion of the project in one season rather than two. Few listed chinook salmon are expected to be present in the project area during May.

Riparian Vegetation

Woody riparian vegetation provides large wood to the stream, which encourages the creation of rearing and spawning areas. Riparian vegetation also provides water quality functions (*e.g.* temperature control and nutrient transformation), bank stability, detritus (insect and leaf input, small wood for substrate for insects, *etc.*), microclimate formation, floodplain sediment retention and vegetative filtering, and recharge of the stream hyporheic zone. Riparian trees removed as a

result of the project will be replanted at a 4:1 ratio to replace lost function provided by living riparian species.

Stream Hydraulics
The construction of the new Frank Parrish Bridge over the Coast Fork Willamette River channel will decrease hydraulic constriction and improve general ecological connectivity such as sediment transport and large woody debris transport within the Upper Willamette River.

Direct Harm or Harassment
Any listed salmonids in the immediate vicinity of the H-pile during driving will likely temporarily relocate to avoid turbidity, vibration, or direct contact with the H-piles. Although direct mortality is conceivable, it is not likely.

2.1.3.2 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation." Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Therefore, these actions are not considered cumulative to the proposed action.

NOAA Fisheries is not aware of any specific future non-federal activities within the action area that would cause greater impacts to listed species than presently occurs. NOAA Fisheries assumes that future private and state actions will continue at similar intensities as in recent years.

2.1.4 Conclusion

NOAA Fisheries has determined that, based on the available information, the proposed action is not likely to jeopardize the continued existence of UWR chinook salmon. NOAA Fisheries used the best available scientific and commercial data to analyze the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NOAA Fisheries applied its evaluation methodology (NMFS 1996) to the proposed action and found that it could cause slight degradation of anadromous salmonid habitat due to increases in sedimentation and turbidity. Furthermore, NOAA Fisheries expects that construction related and H-pile installation effects could alter normal feeding and sheltering behavior of juvenile UWR chinook salmon should any be present in the action area during the proposed action. These effects will be temporary.

Our conclusions are based on the following considerations: (1) Most of the proposed work will occur during the in-water work window of June 1 through October 31, by which NOAA Fisheries expects to minimize the likelihood of UWR chinook salmon presence in the action area due to low flow and warm water conditions; (2) any increases in sedimentation and turbidity to the reaches of the Coast Fork Willamette River will be short-term and minor in scale, and will

not change or worsen existing conditions for stream substrate in the action area; (3) all work will be done in one season and no temporary structures will remain over winter; (4) treated wood will be removed and bents in the channel will be reduced from two to a single pile as a result of the proposed bridge replacement; and (5) the proposed action is not likely to impair properly functioning habitat, appreciably reduce the functioning of already impaired habitat, or retard the long-term progress of impaired habitat toward proper functioning condition essential to the long-term survival and recovery at the population or ESU scale.

2.1.5 Reinitiation of Consultation

Consultation must be reinitiated if: (1) The amount or extent of taking specified in the incidental take statement is exceeded, or is expected to be exceeded; (2) new information reveals that effects of the action may affect listed species in a way not previously considered; (3) the action is modified in a way that causes an effect on listed species that was not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). If the COE fails to provide specified monitoring information by the required date, NOAA Fisheries will consider that a modification of the action that causes an effect on listed species not previously considered, and would cause this Opinion to expire.

2.2 Incidental Take Statement

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. "Harass" is defined as action that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. "Incidental take" is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.2.1 Amount or Extent of the Take

NOAA Fisheries anticipates that the actions covered by this Opinion are reasonably certain to result in incidental take of UWR chinook salmon because of potential adverse effects from increased sediment levels, chemical contamination, and the potential for direct incidental take

during in-water work. The potential adverse effects of the these project components on population levels are largely unquantifiable, and NOAA Fisheries does not expect them to be measurable in the long term. The extent of authorized take is limited to UWR chinook salmon in the Coast Fork Willamette River, and is limited to that caused by the proposed action within the action area.

2.2.2 Reasonable and Prudent Measures

The measures described below are non-discretionary. They must be implemented so that they become binding conditions in order for the exemption in section 7(a)(2) to apply. The COE has the continuing duty to regulate the activities covered in this incidental take statement. If the COE fails to require the contractor to adhere to the terms and conditions of the incidental take statement through enforceable terms added to the document authorizing this action, or fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(a)(2) may lapse.

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. The COE shall:

1. Minimize incidental take from general construction by excluding unauthorized permit actions and applying permit conditions that avoid or minimize adverse effects to riparian and aquatic systems.

2. Ensure completion of a comprehensive monitoring and reporting program to confirm this Opinion is meeting its objective of minimizing take from permitted activities

2.2.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, FHWA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above for each category of activity.

1. To implement reasonable and prudent measure #1 (general conditions for construction, operation and maintenance), the Corps shall ensure that:
   a. Timing of in-water work. Work within the active channel will be completed during the period of May 1 to October 31. All work must be completed by this date unless otherwise approved in writing by NOAA Fisheries.
   b. Cessation of work. Project operations will cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.
   c. Fish screens. All water intakes used for a project, including pumps used to isolate an in-water work area, will have a fish screen installed, operated and maintained according to NOAA Fisheries' fish screen criteria.[1]
   d. Fish passage. Passage will be provided for any adult or juvenile salmonid species present in the project area during construction, and after construction for the life of the project. Upstream passage is not required during construction if it did not previously exist.
   e. Pollution and Erosion Control Plan. A pollution and erosion control plan will be prepared and carried out to prevent pollution related to construction operations. The plan must be available for inspection on request by Corps or NOAA Fisheries.
      i. Plan Contents. The pollution and erosion control plan must contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.
         (1) Practices to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations and staging areas.
         (2) Practices to confine, remove and dispose of excess concrete, cement and other mortars or bonding agents, including measures for washout facilities.
         (3) A description of any hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.

[1] National Marine Fisheries Service, *Juvenile Fish Screen Criteria* (revised February 16, 1995) and *Addendum: Juvenile Fish Screen Criteria for Pump Intakes* (May 9, 1996) (guidelines and criteria for migrant fish passage facilities, and new pump intakes and existing inadequate pump intake screens) (http://www.nwr.noaa.gov/1hydrop/hydroweb/ferc.htm).

(4) A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.

(5) Practices to prevent construction debris from dropping into any stream or water body, and to remove any material that does drop with a minimum disturbance to the streambed and water quality.

ii. Inspection of erosion controls. During construction, all erosion controls must be inspected daily during the rainy season and weekly during the dry season to ensure they are working adequately.[2]

(1) If inspection shows that the erosion controls are ineffective, work crews must be mobilized immediately to make repairs, install replacements, or install additional controls as necessary.

(2) Sediment must be removed from erosion controls once it has reached 1/3 of the exposed height of the control.

f. Construction discharge water. All discharge water created by construction (*e.g.*, concrete washout, pumping for work area isolation, vehicle wash water) will be treated as follows:

i. Water quality. Facilities must be designed, built and maintained to collect and treat all construction discharge water using the best available technology applicable to site conditions. The treatment must remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.

ii. Discharge velocity. If construction discharge water is released using an outfall or diffuser port, velocities must not exceed 4 feet per second.

iii. Spawning areas, marine submerged vegetation. No construction discharge water may be released within 300 feet upstream of active spawning areas or areas with marine submerged vegetation.

g. Treated wood. Projects that require removal of treated wood will use the following precautions:

i. Treated wood debris. Care must be taken to ensure that no treated wood debris falls into the water. If treated wood debris does fall into the water, it must be removed immediately.

ii. Removal of treated pilings. If treated wood pilings will be removed, the following conditions apply.

(1) Pilings must be dislodged with a vibratory hammer.

(2) Once loose, the pilings must be placed onto the construction barge or other appropriate dry storage location, and not left in the water or piled onto the stream bank.

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[2] "Working adequately" means no turbidity plumes are evident during any part of the year.

(3) If pilings break during removal, the stump must be removed by breaking or cutting 3 feet below the sediment surface, then covered with a substrate appropriate for the site.

iii. Disposal of treated wood debris. All treated wood removed during a project must be disposed of at a facility approved for hazardous materials of this classification.

h. Preconstruction activity. Before significant[3] alteration of the project area, the following actions must be completed:

i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.

ii. Emergency erosion controls. Ensure that the following materials for emergency erosion control are onsite.

(1) A supply of sediment control materials (*e.g.*, silt fence, straw bales[4]).

(2) An oil-absorbing floating boom whenever surface water is present.

iii. Temporary erosion controls. All temporary erosion controls must be in-place and appropriately installed downslope of project activity within the riparian area until site restoration is complete.

i. Temporary access roads.

i. Existing ways. Existing roadways or travel paths must be used whenever possible, unless construction of a new way would result in less habitat take.

ii. Steep slopes. Temporary roads built mid-slope or on slopes steeper than 30 percent are not authorized.

iii. Minimizing soil disturbance and compaction. When a new temporary road is necessary within 150 feet[5] of a stream, water body or wetland, soil disturbance and compaction must be minimized by clearing vegetation to ground level and placing clean gravel over geotextile fabric, unless otherwise approved in writing by NOAA Fisheries.

iv. Temporary stream crossings.

(1) The number of temporary stream crossings must be minimized.

(2) Temporary road crossings must be designed as follows:

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[3] "Significant" means an effect can be meaningfully measured, detected or evaluated.

[4] When available, certified weed-free straw or hay bales must be used to prevent introduction of noxious weeds.

[5] Distances from a stream or water body are measured horizontally from, and perpendicular to, the bankfull elevation, the edge of the channel migration zone, or the edge of any associated wetland, whichever is greater. "Channel migration zone" means the area defined by the lateral extent of likely movement along a stream reach as shown by evidence of active stream channel movement over the past 100 years, e.g., alluvial fans or floodplains formed where the channel gradient decreases, the valley abruptly widens, or at the confluence of larger streams.

(a) A survey must identify and map any potential spawning habitat within 300 feet downstream of a proposed crossing.
(b) No stream crossing may occur at known or suspected spawning areas, or within 300 feet upstream of such areas if spawning areas may be affected.
(c) The crossing design must provide for foreseeable risks (*e.g.*, flooding and associated bedload and debris) to prevent the diversion of streamflow out of the channel and down the road if the crossing fails.
(d) Vehicles and machinery must cross riparian areas and streams at right angles to the main channel wherever possible.

v. Obliteration. When the project is completed, all temporary access roads and work bridges must be obliterated, the soil must be stabilized, and the site must be revegetated. Temporary roads in wet or flooded areas must be abandoned and restored as necessary by the end of the in-water work period.

j. Heavy Equipment. Use of heavy equipment will be restricted as follows:

i. Choice of equipment. When heavy equipment must be used, the equipment selected must have the least adverse effects on the environment (*e.g.*, minimally-sized, rubber-tired).

ii. Vehicle staging. Vehicles must be fueled, operated, maintained and stored as follows:

(1) Vehicle staging, cleaning, maintenance, refueling, and fuel storage must take place in a vehicle staging area placed 150 feet or more from any stream, water body or wetland.
(2) All vehicles operated within 150 feet of any stream, water body or wetland must be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected must be repaired in the vehicle staging area before the vehicle resumes operation. Inspections must be documented in a record that is available for review on request by COE or NOAA Fisheries.
(3) All equipment operated instream must be cleaned before beginning operations below the bankfull elevation to remove all external oil, grease, dirt, and mud.

iii. Stationary power equipment. Stationary power equipment (*e.g.*, generators, cranes) operated within 150 feet of any stream, water body or wetland must be diapered to prevent leaks, unless otherwise approved in writing by NOAA Fisheries.

k. Site preparation. Native materials will be conserved for site restoration.

i. If possible, native materials must be left where they are found.
ii. Materials that are moved, damaged or destroyed must be replaced with a functional equivalent during site restoration.

iii. Any large wood[6], native vegetation, weed-free topsoil, and native channel material displaced by construction must be stockpiled for use during site restoration.

l. Isolation of in-water work area. If adult or juvenile fish are reasonably certain to be present, the work area will be well isolated from the active flowing stream using inflatable bags, sandbags, sheet pilings, or similar materials. The work area will also be isolated if in-water work may occur within 300 feet upstream of spawning habitats.

m. Capture and release. Before and intermittently during pumping to isolate an in-water work area, an attempt must be made to capture and release fish from the isolated area using trapping, seining, electrofishing, or other methods as are prudent to minimize risk of injury.

i. A fishery biologist experienced with work area isolation and competent to ensure the safe handling of all ESA-listed fish must conduct or supervise the entire capture and release operation.

ii. If electrofishing equipment is used to capture fish, the capture team must comply with NOAA Fisheries' electrofishing guidelines.[7]

iii. The capture team must handle ESA-listed fish with extreme care, keeping fish in water to the maximum extent possible during seining and transfer procedures to prevent the added stress of out-of-water handling.

iv. Captured fish must be released as near as possible to capture sites.

v. ESA-listed fish may not be transferred to anyone except NOAA Fisheries personnel, unless otherwise approved in writing by NOAA Fisheries.

vi. Other Federal, state, and local permits necessary to conduct the capture and release activity must be obtained.

vii. NOAA Fisheries or its designated representative must be allowed to accompany the capture team during the capture and release activity, and must be allowed to inspect the team's capture and release records and facilities.

n. Earthwork. Earthwork (including drilling, excavation, dredging, filling and compacting) will be completed as quickly as possible.

i. Site stabilization. All disturbed areas must be stabilized, including obliteration of temporary roads, within 12 hours of any break in work unless construction will resume work within 7 days between June 1 and September 30, or within 2 days between October 1 and May 31.

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[6] For purposes of this Opinion only, "large wood" means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull width of the stream in which the wood occurs. See, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

[7] National Marine Fisheries Service, *Backpack Electrofishing Guidelines* (December 1998) (http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf).

ii. Source of materials. Boulders, rock, woody materials and other natural construction materials used for the project must be obtained outside the riparian area.

o. Site restoration. All streambanks, soils and vegetation disturbed by the project are cleaned up and restored as follows:

i. Restoration goal. The goal of site restoration is renewal of habitat access, water quality, production of habitat elements (such as large woody debris), channel conditions, flows, watershed conditions and other ecosystem processes that form and maintain productive fish habitats.

ii. Streambank shaping. Damaged streambanks must be restored to a natural slope, pattern and profile suitable for establishment of permanent woody vegetation.

iii. Revegetation. Areas requiring revegetation must be replanted before the first April 15 following construction with a diverse assemblage of species that are native to the project area or region, including grasses, forbs, shrubs and trees.

iv. Pesticides. No pesticide application is allowed, although mechanical or other methods may be used to control weeds and unwanted vegetation.

v. Fertilizer. No surface application of fertilizer may occur within 50-feet of any stream channel.

vi. Fencing. Fencing must be installed as necessary to prevent access to revegetated sites by livestock or unauthorized persons.

2. To implement reasonable and prudent measure #2 (monitoring), the COE shall:

a. Implementation monitoring. Ensure that the permittee submits a monitoring report to the COE within 120 days of project completion describing the permittee's success meeting permit conditions. The monitoring report will include the following information:

i. Project identification

(1) Permittee name, permit number, and project name.

(2) Project location, including any compensatory mitigation site(s), by 5th field HUC and by latitude and longitude as determined from the appropriate USGS 7-minute quadrangle map

(3) Corps contact person.

(4) Starting and ending dates for work completed

ii. Narrative assessment. A narrative assessment of the project's effects on natural stream function.

iii. Photo documentation. Photo of habitat conditions at the project and any compensation site(s), before, during, and after project completion.[8]

[8] Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

(1) Include general views and close-ups showing details of the project and project area, including pre and post construction.

(2) Label each photo with date, time, project name, photographer's name, and a comment about the subject.

iv. Other data. Additional project-specific data, as appropriate for individual projects.

(1) Work cessation. Dates work cessation was required due to high flows.

(2) Fish screen. Compliance with NOAA Fisheries' fish screen criteria.

(3) A summary of pollution and erosion control inspections, including any erosion control failure, hazardous material spill, and correction effort.

(4) Site preparation.

(a) Total cleared area – riparian and upland.

(b) Total new impervious area.

(5) Isolation of in-water work area, capture and release.

(a) Supervisory fish biologist – name and address.

(b) Methods of work area isolation and take minimization.

(c) Stream conditions before, during and within one week after completion of work area isolation.

(d) Means of fish capture.

(e) Number of fish captured by species.

(f) Location and condition of all fish released.

(g) Any incidence of observed injury or mortality.

(6) Site restoration.

(a) Finished grade slopes and elevations.

(b) Log and rock structure elevations, orientation, and anchoring (if any).

(c) Planting composition and density.

(d) A five-year plan to:

(i) Inspect and, if necessary, replace failed plantings to achieve 100 percent survival at the end of the first year, and 80 percent survival or 80 percent coverage after five years (including both plantings and natural recruitment).

(ii) Control invasive non-native vegetation.

(iii) Protect plantings from wildlife damage and other harm.

v. Monitoring reports will be submitted to:
NOAA Fisheries
Oregon Habitat Branch
Attn: 2001/01008
525 NE Oregon Street, Suite 500
Portland, OR 97232-2778

3. MAGNUSON-STEVENS FISHERY MANAGEMENT AND CONSERVATION ACT

3.1 Magnuson-Stevens Fishery Management and Conservation Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance essential fish habitat (EFH) for those species regulated under a Federal fisheries management plan. Pursuant to the MSA:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (§305(b)(2)).
- NOAA Fisheries must provide conservation recommendations for any Federal or state action that would adversely affect EFH (§305(b)(4)(A)).
- Federal agencies must provide a detailed response in writing to NOAA Fisheries within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NOAA Fisheries EFH conservation recommendations, the Federal agency must explain its reasons for not following the recommendations (§305(b)(4)(B)).

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting this definition of EFH: "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.10). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

EFH consultation with NOAA Fisheries is required regarding any Federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH.

3.2 Identification of EFH

Pursuant to the MSA the Pacific Fisheries Management Council (PFMC) has designated EFH for Federally-managed fisheries within the waters of Washington, Oregon, and California. Designated EFH for groundfish and coastal pelagic species encompasses all waters from the mean high water line, and upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon and California, seaward to the boundary of the U.S. exclusive economic zone (370.4 km) (PFMC 1998a, 1998b). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable artificial barriers (as identified by the PFMC 1999), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years) (PFMC 1999). In estuarine and marine areas, designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border (PFMC 1999).

Detailed descriptions and identifications of EFH are contained in the fishery management plans for groundfish (PFMC 1998a), coastal pelagic species (PFMC 1998b), and Pacific salmon (PFMC 1999). Casillas *et al.* (1998) provides additional detail on the groundfish EFH habitat complexes. Assessment of the potential adverse effects to these species' EFH from the proposed action is based, in part, on these descriptions and on information provided by the Corps.

3.3 Proposed Action

The proposed action is detailed above in section 1.2 of this document. For the purposes of this EFH consultation, the action area is defined as the streambed, streambank and riparian corridor of the Coast Fork Willamette River, extending to the upstream project disturbance limits and downstream one mile below the project disturbance limits. This area has been designated as EFH for various life stages of chinook salmon and coho salmon.

3.4 Effects of Proposed Action

As described in detail in section 2.1.3 of this document, the proposed activities may result in short-term adverse effects to water quality (sediment, chemical contamination, riparian vegetation removal). NOAA Fisheries expects short-term adverse effects from increases in turbidity and the potential for chemical contamination within the action area. NOAA Fisheries expects long-term beneficial effects from decreased constriction and improved hydraulic conditions of the Coast Fork Willamette River channel as a result of the proposed bridge replacement.

3.5 Conclusion

The proposed action will adversely affect the EFH for chinook and coho salmon.

3.6 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the COE, all of the reasonable and prudent measures and the terms and conditions contained in sections 2.2.2 and 2.2.3 are applicable to salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH recommendations.

3.7 Statutory Response Requirement

Please note that the MSA (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

3.8 Supplemental Consultation

The FHWA must reinitiate EFH consultation with NOAA Fisheries if either action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

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